An Exploration of Mental Health Literacy, Stigma, and Masculinity Among College Athletes and Their Non-Athlete Peers

By

Andrew J Mauldin

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in Human Performance

Middle Tennessee State University

May 2022

Dissertation Committee:

Steven Estes, Ph.D., Chair

Angela S. Bowman, Ph.D.

Thomas M. Brinthaupt, Ph.D.

Dedication

This dissertation is dedicated to my beautiful fiancée Kristen. Without your unconditional love and support, I would not have been able to complete this. You constantly push me to do my best and to be the best person I can be. You stood behind me during my times of stress, and the countless dates I've had to miss out on because of time constraints. You never gave up on me even when I came close to giving up on myself. I would not be the person I am today without you, and I love you so much.

Secondly, I would like to dedicate this dissertation to my parents Jim and Berni Mauldin. I am the man that I am today because of your unconditional love and guidance through life. You both taught me so many life lessons that have helped me get to the point where I am today. You taught me to value my relationship with God above all things and to never compromise on who I am and the morals I possess. You taught me to chase my dreams and even if they seemed unattainable that with God nothing was impossible. Thank you for the countless phone calls listening to me complain and the constant encouragement that you have and will always provide. I love you both.

Lastly, I want to dedicate this dissertation to my brother and sister-in-law Allen and Gina and the two best nephews in the world Everrett and Owen. You all have provided me so much support during my studies and I would not be where I am today without you. To Everett and Owen, let this dissertation serve as a reminder to chase your dreams and when it seems like they are out of reach call me and let this serve as a reminder that you can do everything as long as you have loved ones walking beside you.

ACKNOWLEDGMENTS

I would like to express my most sincere thanks and acknowledge the following people for the vital role that they played in my professional development in which this dissertation would not have been possible without.

First, I would like to acknowledge Mark, Heather, Kara, and Kyndel Beasley for your love and support over the past year.

Thank you to David and Barbara Gambill for the love and support that you have provided to me over the past year. You have become my grandparents and I appreciate you both more than you will know.

Dr. Estes, thank you for your support, encouragement, and guidance. Thank you for always reminding me that I have the talent to make a difference and to never give up on myself.

Dr. Bowman, thank you for your guidance and mentorship in statistical analysis. Also thank you for making me use SPSS syntax even when I resisted it really was a life saver.

Dr. Brinthaupt, thank you for your expertise in this study and providing constructive advice to help form me into a better scholar.

I would also like to thank the professors who saw potential in me and never gave up on my development.

Dr. Gray, thank you for the mentorship that you have provided me over the past three years and your friendship is something that I cherish.

Dr. Chanho Kang Dr. Eric O'Neal and Dr. Coates, thank you for seeing the potential in me as lowly Master's student and helping me see myself as an academic. Thank you also for helping me develop the passion that I have for research.

Mr. Patrick Shremshock, thank you for your support over the last 5 years. You are not only a mentor but a friend.

To my fellow GA's: Dr. Gerald Christian, Dr. Danielle Lauber, Dr. Kelsie Roberts and Dr. Sam Stolze. This wasn't always the easiest journey that we embarked on but I count myself extremely blessed to have worked with you all and was graciously welcomed into the GA family. I wish you all the best of luck over your careers and you always have a friend in me

Thank you to Dr. Quincy Byrdsong and Dr. Ruth Henry for your support during the dissertation process as I was working. Your willingness to be patient with me as I navigated first-year teaching responsibilities as well as dissertation writing meant the world to me.

Lastly, Thank you to my fellow faculty with the Department of Kinesiology at Lipscomb. Thank you for welcoming me into the family. Thank you for always having your doors open when I had questions and needed to vent, but thank you for also kicking me out of your office and telling me I needed to write. You all have been such a constant encouragement to me and I am extremely grateful for you.

ABSTRACT

Mental illness has been a growing concern amongst psychologist, epidemiologist, and physicians. Mental illness is a strong concern amongst college-students specifically collegiate athletes. Though mental illness is a growing concern, there are many safe, effective, and inexpensive treatments that are available. However, many collegiate athletes identify as struggling with mental illnesses such as anxiety and depression, however, do not seek out professional help. Many psychologists and epidemiologist believe that this is due to the stigmatization of mental illness. Research suggest that stigmatization is related to a low mental-health literacy (MHL). While research suggest that men on average have a lower MHL score, they also report higher levels of stigma. There is a long history of research examining masculinity in sport. This current study examined the relationship between MHL, stigma, and masculinity in college students as well as student athletes. Through a survey methodology this study examined the correlation between the constructs of MHL, stigma, and masculinity. This study also conducted a Factor Analysis. Surveys were distributed to 150 college-students with 36 student athletes. There was a significant correlation between MHL, stigma, and masculinity in college-students as well as student-athletes ($P<.001$). Although there were no statistical differences in MHL, masculinity, or stigma between students and student-athletes. There were significant differences in regard to gender. Findings as well as practical implications for current and future researchers are suggested and discussed in this dissertation.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter I: Introduction

A recent report by the National Institute for Mental Health (NIMH) reported that 40% of adults between the ages of 18-25 live with mental illness. Those in this age group are also the most likely to live with severe mental illness. However, are the least likely to receive professional medical treatment (National Institute for Mental Health, 2021). A recent report from the American College Health Association (2019) shows that 66% of the students that where surveyed felt overwhelmingly anxious while 45% of college students expressed difficulty functioning due to depression (Beasley et al. 2020). Of these individuals between the ages of 18-25, collegiate athletes are at an enhanced risk to live with mental illness (Wolanin et al., 2016).

Although there is a greater percentage of college athletes that experience mental health illness than non-athletes, collegiate athletes are far less likely to seek out treatment. A report showed that while over 54% of collegiate athletes felt a need to seek mental health intervention and treatment, fewer than half of those athletes utilized the mental health services that were offered (Moore, 2016; 2017). Moore (2017) lists three reasons why collegiate athletes might feel uncomfortable seeking medical attention regarding their mental health. First, there is the belief among collegiate athletes that disclosing a mental illness gives the appearance of being seen as weak and/or a failure (Gill, 2009; Moore, 2017). Secondly, Moore states that collegiate athletes might be deficient when it comes to mental health literacy. Lastly, collegiate athletes fear that disclosing a mental health illness could result in a loss of playing time or scholarship. These three reasons all have to do with the stigma surrounding mental health and mental health literacy (Moore, 2017).

Mental health stigma is defined as profoundly negative stereotypes about people living with mental disorders (Smith & Applegate, 2018). Mental health literacy (MHL) is used to gauge knowledge and attitudes in mental health that support recognition and prevention of mental health issues (Jorm et. al, 1997; O'Connor & Casey, 2015). Bathje and Pryor (2011) state that there are two primary reasons that stigma is related to treatment avoidance. First, they state that people strive to avoid being publicly identified as "mentally ill" by seeking mental health counseling (Sibicky & Dovidio, 1986). Secondly by seeking and receiving treatment, people accept the label of "mentally ill" which reduces self-esteem (Corrigan, 2004).

The rise in mental illness proposes a need for scholarship to examine ways to better implement strategies to improve mental health specifically in college students. One demographic of college students that can be examined in particular is collegiate athletes. Collegiate athletes are put in pressure driven situations, they are put under intensive time constraints, and have the added stressors of being a student-athlete. For these reasons, research should examine ways to evaluate mental health and mental health literacy in collegiate athletes.

Problem statement

Mental health has been a pertinent topic in sport psychology scholarship within the last five years (Donohue et al., 2018; Sheehan et al., 2018; Vella, et al., 2021). There have been numerous studies that have examined the relationship between mental health and athletes. Although there have been many studies examining mental health literacy in college students (Cheng et al.,2018; Gulliver, et al., 2019; Bullivant et al., 2020; Beasley, et al., 2020), few studies have examined mental health literacy in

college athletics (Chow et al., 2020). Lastly, although there has been significant research involving masculinity and collegiate sport participation (Raemaker & Petrie, 2019) there have been few studies that have looked at the stigmatization implications that masculinity has on college athletes.

Purpose

The current dissertation consists of two studies that examine different factors that might relate to an individual's mental health literacy. The first study examined the relationship between masculinity and mental-health stigma had on mental health literacy in college athletes. Through this first study we ask the following research questions:

R1: Does an athlete's perceived masculinity correlate with their mental health literacy?

R2: Does an athlete's mental health literacy correlate with athletes perceived mental health stigma?

R3: Does an athlete's perceived masculinity correlate with athlete's mental health stigma?

R4: Is there a significant difference in masculinity, MHL, and stigma, based on gender?

R5: Is there a significant difference in masculinity, MHL, and stigma, between athletes and their non-athlete peers?

The purpose of study was to add to the literature in regards to MHL and collegiate athletes. This study will add to the literature in several ways. The first way this study will add to the literature is by examining the relationship between masculinity and MHL. Secondly, this study will add to the literature by examining the relationship

that MHL has on stigma. Although there have been studies examining MHL and stigma (Bowman et al., 2018; Jorm, 1997), there have been few studies examining that relationship in college-students and more specifically college athletes. Thirdly I add to aim to the literature by examining the relationship between masculinity and stigma. Fourthly I aim to add to the literature by examining masculinity, MHL and stigma based on gender. Lastly I plan to add to the literature by examining the relationship between masculinity, MHL and stigma between college athletes and their non-athlete peers. Through this study I hypothesize the following:

H1: Masculinity has a negative correlation with mental health literacy

H2: Mental Health Literacy has a negative correlation with mental health stigma

H3: Masculinity has a positive correlation with stigma.

H4: There is a significant difference between men and women in masculinity, MHL, and stigma.

H5: There is a significant difference between athletes and their non-athlete peers in masculinity, MHL, and stigma.

Chapter II: Review of Literature

In the following chapter I will review the literature surrounding mental health literacy, stigma, and masculinity. This literature review will focus on the relationship between masculinity, mental health literacy (MHL) and stigma in college athletes and their non-athlete peers. Through this scoping review of the literature, I aim to outline the previous research and illustrate how this study aims to add to the literature regarding the concepts.

Mental Health

The World Health Organization (WHO) (2018) defines health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity (paragraph 1)" The WHO furthermore defines mental health as "a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively, and is able to make a contribution to their community" (WHO, 2018).

The WHO states that there has been a 13% rise in mental health conditions over the last decade. Furthermore, depression is one of the most common disabilities worldwide (WHO, 2021). Suicide is the second leading cause of death among 15-29-year-olds in America (WHO,2021). While mental health conditions are on the rise world-wide, these conditions can be easily and effectively treated at a relatively low cost (WHO, 2021).

Although treatment of mental health conditions is often relatively straight-forward, effective, and low cost, the identification and willingness to seek that treatment is

considered by many health professionals to be at “crisis levels” (National Institute for Mental Health, 2021).

Investment in the promotion of mental health awareness, stigma reduction, and mental health literacy is beneficial in the treatment and care of mental health. By challenging the inaccurate knowledge and beliefs of mental health, individuals may therefore have the tools needed to seek substantial treatment and care for their mental health.

Mental Health Literacy

Mental health literacy (MHL) is described as the knowledge and beliefs about mental disorders which influence their recognition, management or prevention (Jorm et al., 1997). MHL is often assumed to only incorporate knowledge regarding mental health. However, MHL also encapsulates the ability to convert that knowledge into action that can benefit the mental health of someone (Jorm et al., 2002).

MHL is a concept derived from health literacy. Health literacy is the ability to improve the quality of health and the knowledge of health (Adams & Corrigan, 2003; Ratzan & Parker 2000). Health literacy has been positively correlated with maintaining good physical health (World Health Organization, 2021).

Jorm et al., (1997) lays out seven components of MHL which include the following:

1. The ability to recognize mental illness.
2. The knowledge of how to seek mental health information.
3. Knowledge of the risk factors and causes of mental illness.

4. Knowledge of effective self-help.
5. Knowledge and beliefs about professional help.
6. Attitudes that promote the recognition of mental health.
7. Attitudes that promote help-seeking intervention.

MHL is utilized as an intervention tactic to improve mental health knowledge and the knowledge of treatment (Jorm et al., 1997; 2002). One of the main assumptions of MHL is that MHL and stigma are negatively correlated in the general population such that when MHL rises stigmatization lowers (Bowman, 2018). To fully understand the effects of MHL there should first be a thorough knowledge of stigmatization.

Mental Health Stigma

Stigmatization is the socially driven label that is potentially applicable to those who seek psychological help (Smith, 2007). Stigmatization is predominantly observed in athletes specifically due to the student-athletes' fear of being perceived as weak. This stigmatization toward student-athletes often prevents individuals from seeking and receiving appropriate help (Lopez & Levy, 2013; Delanardo & Terrion, 2014).

When examining stigma in collegiate athletes, it is important to establish the distinction between public stigma and self-stigma. Bathje and Pryor (2011) specify that "Public stigma is the typical sociological response that people have to stigmatizing attributes, while self-stigma represents the internalized psychological impact of public stigma" (p. 2). Self-stigma is the internalization of public stigma by adapting stereotypes and prejudices regarding people with mental illness into beliefs about their own individual self (Vogel et al., 2006). Previous studies have predicted that as the

understanding of mental illness broadens, public and self-stigma may be less likely to be experienced (Phelan et al., 2000).

Social stigma theory suggests that people become stereotyped as undesirable due to possessing certain attributes or demonstrating undesirable behaviors (Goffman, 1963). The attitude derived from this leads to generalized stigma towards specific demographics within a society. Although mental illness has a significant impact on an individual, it is appropriate to suggest that overcoming stigma regarding mental illness can be as difficult if not more difficult that overcoming mental illness itself (Corrigan, 1998; Bradsbury, 2020). Further studies emphasize that the greater the levels of public stigma, the greater likelihood of increased self-stigma for individuals with mental health illness (Pompili et al., 2003; Mehta et al., 2009).

It is also critical to outline that when it comes to stigmatization there can be implicit and explicit stigma. Implicit stigma is that which is generated by one's own thought processes. Implicit stigma is characterized as depending more on the subconscious beliefs associated toward a specific activity (Greenwald & Banaji, 1995). Explicit stigma, in contrast, is that which is generated by one's own awareness of the thought processes of others. Explicit stigma is the more controllable and conscious aspect of stigma (Wahto et al., 2016). Although there have been many scales developed to measure implicit and explicit stigma, there is still debate about the validity of these measures (Greenwald et al., 1995; Delenardo & Terrion, 2014). A meta-analysis (Hoffmann et al., 2005) discovered that there were weak correlations between implicit and explicit stigma.

Mental Health Stigma in Men

Intuitively it would stand to reason that stigma is related to treatment-seeking tendencies. Previous research has suggested that men, on average, sustain more negative attitudes toward help-seeking intervention strategies in regard to mental health (Wahto & Swift, 2016). Furthermore, research suggests that many men may be less likely to seek out psychological treatment due to masculinity norms that encourage them to suppress or deny their psychological problems (Moller-Leimkuhler, 2002).

Masculinity has been studied in many areas of scholarship including psychology, sociology, and philosophy. Research has tended to focus on the impact that socialized masculine ideologies have on the lives of men (Smiler, 2004). Furthermore, a significant number of studies indicate that men who operate under traditional masculine norms often have higher levels of psychological distress such as depression and anxiety (Shepard, 2002; Blazina et al., 2008; Blazina & Watkins, 1996; Ramaeker & Petrie, 2019). How these norms were generated is relevant to this study and will be discussed below in reference to masculinity in sport.

As noted earlier it has been identified that men are less likely to seek medical or psychological treatment than women (Carragher et al., 2010). Research has also previously demonstrated an inverse relationship between masculinity and help-seeking attitudes (Groeschel et al., 2010; Levant et al., 2009; Ramaeker & Petrie, 2019). One possible indication to this inverse relationship is that in comparison to women, men are more likely to experience stigma if they seek psychological care (MacKenzie et al., 2004). Therefore, the very act of help-seeking can be the cause of implicit or explicit

stigma. This situation often can present a significant psychosocial barrier for men who contemplate seeking mental health treatment.

There are two main theories that exist that mediate the relationship among gender related norms and sociological phenomenon. The first main theory that this study hopes to explore is the relationship between Gender Role Conflict Theory and masculinity in sport. Gender role conflict (GRC) is a "psychological state in which socialized gender roles have negative consequences for the person or others" (O'Neil, 2008, p. 362). Gender role conflict is based in hegemony. In GRC it is implied that through the psychological state of these socialized gender roles, men who conform to these roles do so for the basis of power (O'Neil, 2008)

While GRC is often used theory used in sociological research regarding masculinity another theory that is relevant is the Conformity to Masculine Norms Theory (CMN) (Mahalik et al., 2012). CMN posits that men learn gender norms through a socialization process. Through this socialization process, the benefits and cost of conforming or not conforming to these norms are largely driven based on context (Mahalik et al., 2003; Raemaeker & Petrie, 2019). While both theories have their significance in the literature regarding masculinity, for the basis of this study CMN is a more appropriate theory to use to examine how individuals simply conform to these norms through learned activities. There has been scholarship that has explored the relationship between CMN and mental illness (Wong et al., 2012; Mahalik et al., 2003; Mahalik et al., 2006; Raemaeker & Petrie, 2019).

Conformity to Masculine Norms Inventory

Masculine ideology and gender role conflict has received attention in many disciplines including psychology, counseling, education, and business. Through this scholarship there has been much debate over what is considered masculine norms, as well as what constructs make up masculine norms (Levant et al., 2020). Conformity to masculine norms is defined as the degree to which individuals endorse the requirements of certain masculine norms. The Conformity to Masculine Norm Inventory (CMNI) was created "to be able to examine the great variability in how men enact masculinity, as well as understand the causes of the variability and the resultant benefits and costs to the individual and others" (Levant et al., 2020, p. 4). While the CMNI is the most widely utilized scale, there has been debate over the number of factors included in this scale (Levant et al., 2020). The debate has to do with the survey fatigue caused by the large size of the instrument utilized.

The original inventory consisted of 94-items that measured conformity to 11 masculine norms (Mahalik et al., 2003). Although this original scale has frequently been utilized in research, there has been substantial scholarship that has sought to shorten this scale to reduce survey fatigue. While there have been several scales that have been developed shortening the Mahalik et al. scale, Levant et al's., (2020) scale has developed a validated 10-factor scale that significantly shortens the original 94-item 11-factor scale.

Sport and Masculinity

Sport and masculinity are two constructs that date back to Plato in his writing of *The Republic*. In *The Republic* Plato argues for the importance of physical training as a form of character training. Through this idea of character training many arguments have

been centered around the idea of sport building character (Reid, 2007). Plato doesn't implicitly state that masculinity builds character, however in Ancient Greece, physical training and athletics were only for boys and men. Inherently when speaking about physical training many times masculinity was implied.

Through this idea of sport building character, it has evolved to the point where many make the claim "sport will make men out of boys". Furthermore, there is the assumption among many that there is a direct relationship between sport participation and moral development (Arnold, 1994). Through the participation in sport many qualities such as generosity, courage, and teamwork can be developed through proper teaching and coaching of these physical skills (Arnold, 1994).

From this, sport evolves in the late 19th century into this idea called "Muscular Christianity." The basic premise of muscular Christianity is that participation in sport would contribute to morality, physical fitness, and manly character (Watson et al., 2005). Furthermore, aligned with muscular Christianity was the belief that godliness was compatible with manliness (Watson et al., 2005). Although there was the character-building aspect of muscular Christianity, there was also the physical aspect of participation in sport building physical and mental strength. Because of these connections there was a great increase in the role that sport had on young men.

The modernization of sport was driven by two sociologically driven forces, "muscular Christianity" and the Industrial Revolution (Graydon, 1983). Through the time of the Industrial Revolution, creating a perfect man and a perfect society was the ultimate goal of the American life (Lewis, 2005). The Industrial Revolution played a major role in the focus on health and leisure. Due to the automation of industry, this led

to many live a sedentary lifestyle (Watson et al., 2005). While work was so predominantly important with the protestant work ethic, the industrial revolution led to a break through on the ideas of rest and play. Through this time many institutions established gymnasiums to both increase public health but also as a source of this character building. Furthermore, many in the religious community thrived on the idea of using sport as a means to develop boys into Men (Lewis 2005).

Although the premise behind muscular Christianity was to teach boys about character and virtue through sport, many times it was also as a rebuke to societal norms (Messner, 2002). Modern sport emerged as a male's response to social change (Messner, 2002). In the late 19th century, organized sport became a primary masculinity- validating experience (Dubbert, 1979). Though the goal of muscular Christianity was to teach virtue, many would consider some of the lessons being taught through sport as vices (Messner, 2002).

First, the idea of muscular Christianity put a strain on women participation in sport and often undermined a woman's sporting prowess (Myers & Lips,1978). Secondly Gorn (1986) argues that masculinity in sport was instituted due to the fear of a "feminization of society" (Gorn, 1986). Furthermore, in promoting the dominance of men and the submission of women the virtues of physical and mental strength, dominance, and power were juxtaposed (Bennett, et. Al, 1987; Theberge, 1987). Through this period, the foundation is set for modern sport and many of the sociological implications that can still be seen today were formed.

Furthermore, the relationship between sport and masculinity has been so engraved into the mind of Americans that prior to 1972 girls had limited opportunities to

participate in sport (Stevenson, 2007). It was only in 1972 with the passage of Title IX that we see the possibility of equitable rights and access to sport regardless of gender. Despite having similar access to sport as men, there was still the sociological stigma that women were inferior to men (Smith, 2018). Pop culture has even made digs at the perception of woman in sport with various movies including lines such as “You play ball like a girl” when throwing out insults.

Historically, sport has often been viewed as a social contest for men to portray and display their masculinity (Connell, 2005). Sport not only can be identified as this social contest to display masculinity, but sport also frequently reinforces traditional masculine norms (Messner, 1990; Steinfeldt et al., 2011, Raemaeker & Petrie, 2019). Furthermore, some scholars claim that through these sport environments, boys and men internalize these masculine stereotypes and ideologies and often this can be dangerous to their physical and psychological health and well-being (Connell & Messerschmidt, 2005).

Research has also shown that male athletes typically have more negative views toward psychological treatment than woman tend to (Martin, 2005). Many scholars suggest that this could be due to the traditional masculine norms that are adopted by male athletes such as displaying physical and mental toughness and vigor. This could also be due in part to the masculine norms of not showing vulnerability (Raemaeker & Petrie, 2019).

Hegemonic Masculinity

One concept that must be discussed when examining masculine norms in sport is hegemonic masculinity (HM). The term hegemony refers to the cultural dynamic by which a group assumes leadership and power position in social life, and this assumption is also understood by those who are not in power (Connell, 1987). English states, "Hegemonic masculinity applies to the way the ideas about gender are embedded within social practices, such as mass media, religious doctrines, and sport, especially how those cultural ideals exert institutional power" (English, 2017 p. 185). Furthermore, HM often generates the norm of men being in dominant positions and the subordination of woman (Connell, 2005). Not only is the subordination of women encouraged in hegemony, but also men who do not acclimate to these masculine norms are demoted to a position of subordination.

English (2017) argues that many of the issues that are derived from sport stem from the influence of HM. Many characteristics associated with sport are rooted in HM; issues such as an overemphasis on competition, a win-at-all-cost attitude, and poor sportsmanship all can be associated with masculine norms (English, 2017). Through the existence of these masculine norms, men who portray these characteristics rise to a position of authority and power. Through the portrayal of these norms, men who do not meet these norms are often marginalized and stigmatized either implicitly or explicitly.

Furthermore, many scholars of sport argue that through HM women and men who lack the traits displayed in orthodox masculinity are automatically dismissed. Connell (1987) even states "in Western countries, images of ideal masculinity are constructed and promoted systematically through competitive sports" (p. 84-85). HM also has historically excluded women athletes and has marginalized them due to the

myths of their frailty and physical weakness (English, 2017; Verbrugge, 1988; Vertinsky, 1989).

Although HM has commonly focused on the physical attributes and characteristics of masculinity, it is important not to dismiss the psychological and mental characteristics of HM. Although physical strength is considered a masculine norm, it stands to reason that mental strength would also be considered a masculine norm. Furthermore, mental weakness would be considered a feminine norm. Mental strength could be characterized by having emotional control and the ability to suppress your emotions to be perceived as strong. While mental weakness could be characterized by letting one's emotions get the better of them and effect their behavior. In the assumptions of these norms, it is clear to see hegemonic masculinity at play once again.

Scholars also indicate that HM could be very harmful when it comes to relationship building. Kidd (1990) reasoned that sport reinforces HM by discouraging men from having deep emotional bonds with their fellow teammates. Through this Kidd is arguing that the absence of deep emotional bonds is a sign of masculinity. Kidd also states that through HM athletes inflict both physical and psychological injury upon themselves and others (Kidd, 1990). English (2017) argues that ultimately the relationship between HM and hypercompetitive attitudes explains the win-at-all-cost attitude that is so often portrayed in competitive sport.

This review of literature has displayed a connection between the constructs in my original hypotheses. Through my methodology section I focus on executing a thorough

methodology to ensure valid and reliable data and results to accurately test the following hypotheses:

H1: Masculinity has a negative correlation with mental health literacy

H2: Mental Health Literacy has a negative correlation with mental health stigma

H3: Masculinity has a positive correlation with stigma.

H4: There is a significant difference between men and women in masculinity, MHL, and stigma.

H5: There is a significant difference between athletes and their non-athlete peers in masculinity, MHL, and stigma.

Chapter III Methodology

Procedures:

Research has been conducted with the approval of the Institutional Review Board at a private Christian University that participates in Division I athletics. Participants in this study were asked to give their informed consent to participate and informed that all data accumulated will be kept anonymous. Participants were informed that the survey methodology would take approximately ten minutes to complete and that participation in this study was completely voluntary. Due to the nature of this survey involving sensitive information relating to athlete mental health, anonymity was assured, and only the primary investigator and the other researchers had access to these anonymous surveys.

The participants were then given a QR code to scan so that they could access the survey on Qualtrics. Participants were then asked to complete a demographics section of the survey followed by the 64-item survey that we used. Participants were then thanked for his or her participation and reassured of the anonymity of their results. After the data were collected through Qualtrics the primary investigator uploaded the data to SPSS 28.0 for analyses.

Participants

Participants were recruited through a convenience sampling. I emailed professors at the University where samples were collected to receive permission to come to their class and recruit participants. I then informed the participants about the purpose of my study and assured the participants of their anonymity. Data from 174

college students were collected. Through the data cleaning process, 24 participants were removed from this study due to incomplete surveys with multiple items left unanswered resulting in a final sample of 150 participants. Fifty-six percent of the participants of the study were female (*n=85*) while 43% were male (*n=64*) while 1% identified as non-binary. Twenty-five percent of the participants were collegiate athletes (*n*=37) while 75% were not collegiate athletes (*n*=113). Eighty-seven percent of the participants identified as Christian (*n*=131) while 10% identified with no religion (*n*=15). Fifty-three percent of the participants were freshman (*n*=80) while 17 % were sophomore (*n*=25) 18% were juniors (*n*=27) and 12% were seniors (*n*=18).

Instruments:

Mental Health Literacy

The first instrument used to measure mental health literacy was the Mental Health Literacy Scale (MHLS-SF) by Bowman. (2018). This scale contains 20 items rated on a four-point Likert-scale ranging from 1 (*very unlikely*) to 4 (*very likely*) regarding their perspectives on each item. The goal of this scale is to measure the degree of knowledge that each athlete has toward mental health concepts. The MHLS-SF has a strong internal consistency (α=.83) and is scored by summing the responses to each item after reverse scoring eight-items. The MHLS-SF score has a range of 20-80 with higher scores indicating an increased mental health literacy.

Conformity to Masculine Norms Inventory

The second scale used to evaluate conformity to masculine norms was the Conformity to Masculine Norms Inventory-Short (Levant et al., 2020) (α=.705). Through

the CMNI-short scale there have been 10-factors that have been extracted from the original CMNI scale. The ten masculine norms that have been extracted for this scale are as described in Table 1.

Table 1

CMNI FACTORS	
Winning	Focus on successes and winning competitive contests
Emotional Control	Having the ability to control and hide the emotions one is facing.
Pursuit of Status	Wanting to be seen as an important and successful person
Playboy	Having and endorsing casual sexual activity
Power over women	Having a general control of the woman that the encounter
Risk-taking	Voluntarily exposing themselves to risky situations
Primacy of work	Endorsing work as the primary focus of life and the end all be all.
Heterosexuality	The importance of being perceived as heterosexual and the fear of being seen as gay.
Violence	Endorsing violence as acceptable in certain if not most situations.
Self-reliance	Reluctance to seek help but rather rely on one's self.

**Note:* Several items were reverse coded, then each item was summed to create the mean score for each participant as the masculinity sub-score that was used for analysis.

Stigma Scale for Receiving Psychological Help

The final scale that was utilized was the Stigma Scale for Receiving Psychological Help (SSRPH) (Komiya et al., 2000). This is a 5-item scale that measures an individual's perceived self-stigma as well as the stigma around receiving psychological help. This scale asks participants evaluate each item on a 5-point Likert scale with items such as "People will see a person in a less favorable way if they come to know that he/she has seen a psychologist."

Analysis Plan

Data cleaning. Data were cleaned and validated based on a priori criteria. Several items were reverse scored as necessary and scale scores were then calculated based on the reverse score. Items and scores were analyzed for missing data and to evaluate if items were missing at random. A Little's MCAR test was run to test whether data were missing at random. A Little's MCAR test that is not statistically significant (P>.05) illustrates that data were missing at random. This study had a Little's MCAR value of (P=.62) which indicates that data were missing at random. The investigators then used multiple imputation to address missingness before running the main analyses.

Preliminary Analyses

Preliminary analyses were run by calculating descriptive statistics as well as bivariate correlations for the constructs. Secondly, internal consistency was calculated for the constructs used by calculating Cronbach's alpha to assess inter-item

relationships (Cronbach, 1951). This preliminary analysis was conducted using IBM (28.0) SPSS statistical software.

Secondarily an exploratory factor analysis (EFA) was run using AMOS 25.0 to evaluate the number of factors present in the MHLS-SF. Through this EFA I generated factor loadings for each item. I then examined the eigen values to determine the number of factors to extract from this scale.

Chapter IV Results

Descriptive Statistics

As part of the preliminary analyses, data were downloaded from Qualtrics into SPSS (IBM SPSS v. 28). Descriptive statistics of the main constructs were gathered to calculate the mean values and standard deviations as featured in Table 2. Secondly descriptive statistics for the factors were calculated as part of the masculinity scale as featured in Table 3. This was done to analyze the mean and standard deviation for the sub-scale scores.

Table 2.

Descriptive Statistics of Participants

	N	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
MHL Stigma	148	1	4	3.04	0.53
Masculinity	141	1.83	4.2	2.79	0.39
Mental Health	142	33	78	63.26	6.96
Stigma	148	1	4.8	2.42	0.68
MHL1_13	144	25	51	41.98	4.25

Table 3.

CMNI Scale Scores

	N	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
emotion	149	1	5	3.04	1.11
winning	148	1	5	2.82	0.92
playboy	147	1	5	1.50	0.82
violence	148	1	5	2.72	0.96
hetero	147	1	5	3.45	1.16
Importance	148	1	4.67	3.08	0.81
reliance	143	1	5	3.09	0.53
risk	148	1	5	3.05	0.99
work	148	1	5	3.23	0.91
power	147	1	5	2.05	0.96

As part of the analyses, Cronbach's alpha was calculated to evaluate the internal consistency for each of the scales that were utilized as seen in Table 4. The MHLS-SF had a very high internal consistency as seen in Table 4. Furthermore, the CMNI-short scale and the stigma scale also had acceptable internal consistency as seen in Table 4 (Nunnally, 1978).

Table 4.

Internal Consistency of the Scales			
Scale	*Cronbach's Alpha*	*Standardized Alpha*	*# of items*
MHLS-SF	.85	.86	20
CMNI-Short	.74	.74	30
Stigma	.69	.69	5

After conducting descriptive statistics, main analyses for this study were run. The first group of analyses conducted were multiple correlations analysis. The first bivariate correlation analysis that was conducted examined the relationship between three major variables and the demographic variables as featured in Table 5. The three major variables that were examined were masculinity, MHL, and stigma.

Table 5.

Correlation Analysis for Participants			
	Stigma	Masculinity	MHL
Stigma	1		
Masculinity	.41**	1	
MHL	-.49**	-.49**	1

Note: *p<.05; **p<.01

With this initial analysis there is a strong relationship with many of the constructs that I was analyzing. This gave weight to the original hypotheses that in the general college student population that there is a strong negative correlation between Masculinity and MHL. This supports Hypothesis 1 which assumes that there is a negative relationship between conformity to masculine norms and mental health literacy.

Secondly this analysis supports Hypothesis 2 that Mental Health Literacy has a negative correlation with stigma. This supports the idea that as Mental Health Literacy scores go up, the likelihood of feeling stigmatized goes down. Lastly this correlation analysis also supports the third hypothesis that there is a positive correlation between masculinity and stigma. These data suggests that as masculinity increases, stigmatization therefore also increases.

Correlation Analyses

After running these correlations on the complete sample, the data file was split to run correlations on the specific groups to test the hypotheses made about athletes. We ran bivariate correlations with the athlete's group as well as the control group as presented in Table 6 (control group) and Table 7 (athlete group).

Table 6.

Correlation Analysis for Non-Athletes			
	MHL	Masculinity	Stigma
MHL	1		
Masculinity	-.49**	1	
Stigma	-..54**	.41**	1

Note: **p* < .05; *p* < .01

Table 7.

Correlation Analysis for Athletes			
	MHL	Masculinity	Stigma
MHL			
Masculinity	-.55*	1	
Stigma	-.23	.41**	1

Note: **p* < .05; *p* < .01

Data suggest that there is a significant negative correlation between Masculinity and MHL in both groups. Furthermore, the data also shows that there is a significant negative correlation between mental health literacy and stigma in collegiate athletes. Lastly, data show that there is a significant positive relationship between masculinity and stigma in collegiate athletes.

Through the correlation analysis, the hypotheses were tested regarding athletes and mental health literacy. Although data suggests that there is a significant correlation between mental health literacy, stigma, and masculinity, it would be prudent to run analyses to investigate to what degree these constructs are correlated in athletes in comparison to a control group.

Comparison of Means

For this analysis independent t-test as shown in Table 8 and Table 9 to compare the means of the athlete's group and the control group was conducted.

Table 8.

Means of Athletes and Their Non-Athlete Peers

	college athlete	*N*	*Mean*	*Std. Deviation*	*Std. Error Mean*
Masculinity	no	108	2.78	0.39	0.04
	yes	33	2.82	0.39	0.07
Stigma	no	112	3.04	0.57	0.05
	yes	36	3.04	0.45	0.07
MHL	no	106	63.11	7.54	0.73
	yes	36	63.69	4.92	0.82

Through this independent samples t-test, data suggests that there is no significant difference ($p>.005$) in the means based on the athlete and the control group as seen in table 10.

Table 9.

T-Test comparing Athletes and their Non-Athlete Peers

	t	*df*	*one-tail p-value*	*two-tail p-value*
Masculinity	-0.39	139	0.34	0.69
Stigma	-0.06	146	0.47	0.95
MHL	-0.43	140	0.33	0.67

Furthermore, the literature suggests that men tend to have on average a lower mental health literacy score in comparison to women. To examine this assumption in college athletes the primary investigator split the data set to an athlete group as well as a control group. With the split data set another independent t-test to compare means between two groups was run. This time however with the data set split, the means were grouped by gender as seen in Table 10, Table 11.

Table 10.

Means Athletes and their Non-Athlete Peers based on Gender

College Athlete	*Gender*	*N*	*Mean*	*Std. Deviation*	*Std. Error Mean*
Masculinity	Female	63	2.6757	0.33	0.04
	Male	44	2.9462	0.42	0.06
Stigma	Female	65	3.1912	0.56	0.07
	Male	46	2.81	0.50	0.07
MHL	Female	63	64.65	7.07	0.89
	Male	42	60.64	7.68	1.18
Non Athlete					
Masculinity	Female	19	2.79	0.29	0.07
	Male	14	2.85	0.51	0.14
Stigma	Female	20	3.07	0.49	0.11
	Male	16	3.00	0.40	0.10
MHL	Female	20	63.80	5.05	1.13
	Male	16	63.56	4.91	1.23

Table 11.

T-test comparing Athletes and their Non-Athlete Peers based on Gender

College Athlete	*t*	*df*	*one-tail p-value*	*two-tail p-value*
Masculinity	-3.73	105	< .001	< .001
Stigma	3.72	109	< .001	< .001
MHL	2.75	103	0 .004	0 .007
Non Athlete				
Masculinity	-0.37	31	0 .356	0 .712
Stigma	0.51	34	0 .304	0 .608
MHL	0.14	34	0.444	0.888

Data suggests in Table 11 that there is a significant difference in masculinity, stigma and mental health literacy in women when compared to men. This is intriguing when compared to the athlete's group when grouping based on gender. In Table 11 data suggests that there is not a significant difference in means when it comes to masculinity, stigma, and mental health literacy when grouped by gender for the athlete sample.

Factorial analysis

The MHLS-SF (2018) is a short form scale that has been developed recently. Due to the recent nature of the development of the scale, I decided to run factorial analyses to better examine internal consistency and validity of the scale, and also to analyze the factors that define the scale.

Thompson (2004) states that exploratory factor analysis should be used when there is not substantial theory guiding the development of the scale. For this purpose, due to the recency of this scale an exploratory factor analysis (EFA) was run to determine the number of factors to extract as seen in Table 12.

Table 12.

Mental health Literacy Scale Short-Form Communalities	
Item	Value
1	0.56
2	0.55
3	0.58
4	0.62
5	0.66
6	0.65
7	0.56
8	0.69
9	0.65
10	0.60
11	0.39
12	0.44
13	0.78
14	0.67
15	0.76
16	0.75
17	0.72
18	0.72
19	0.62
20	0.71

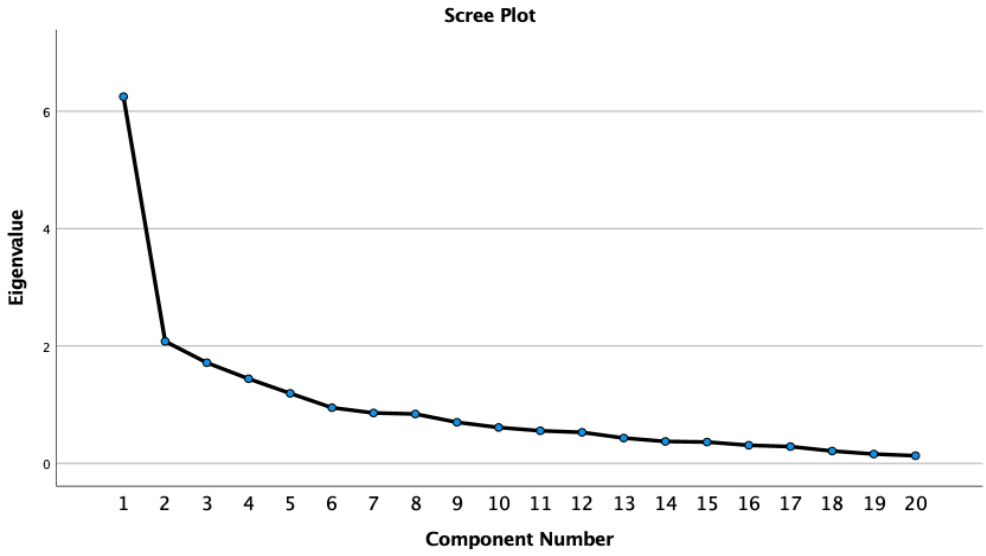
Furthermore, to determine the components of the scale and the number of factors to extract, eigenvalues were examined for each principal component as seen in Table 13.

Table 13.

Eigen Values and Associated Variance			
Factor		*Eigen Value*	*% Of Variance*
	1	6.25	31.251
	2	2.08	10.399
	3	1.716	8.578
	4	1.442	7.212
	5	1.194	5.969

Secondarily a scree plot was run as seen in Figure 1. to better help determine the number of factors to extract for this analysis.

Figure 1.



Through running the scree plot and the eigen values, five factors were extracted for the initial analysis. Due to the eigen a 4-factor model was also considered due to only four factors having eigenvalues over 1.4. With the 5 factors extracted a component matrix was run as well as a varimax rotated component matrix as seen in Table 14 and Table 15.

Table 14.

Initial Component Loadings by Item

	Component				
Item	1	2	3	4	5
1	0.286	0.407	-0.321	0.442	0.127
2	0.185	0.355	-0.261	0.559	-0.104
3	0.164	0.561	-0.165	0.387	0.249
5	0.272	0.062	0.192	0.218	-0.704
6	0.192	0.405	0.56	0.329	0.16
14	0.788	0.098	-0.176	0.098	-0.04
15	0.802	0.098	-0.313	0.042	-0.055
16	0.807	0.176	-0.26	0.058	-0.001
17	0.821	0.199	-0.051	-0.011	0.029
18	0.766	0.343	-0.105	-0.027	-0.029
19	0.659	0.365	-0.136	-0.018	0.192
20	0.732	-0.35	-0.188	-0.097	0.097
7	0.563	0.394	0.179	-0.222	0.058
8	0.577	0.47	0.322	-0.168	-0.032
9	0.563	0.505	0.141	-0.146	-0.194
10	0.57	0.15	0.273	-0.355	-0.233
11	0.544	0.192	0.163	-0.182	0.03
12	0.401	0.012	0.452	0.279	-0.014
13	0.241	-0.16	0.664	0.41	0.29
14	0.211	0.356	0.032	-0.317	0.592

Note: Extraction Method: Principal Component Analysis.
a. 5 components extracted.

Table 15.

Rotated Component Loadings by Item

	Component				
Item	1	2	3	4	5
1	0.165	0.072	0.725	-0.04	-0.041
2	0.071	0.002	0.706	-0.005	0.219
3	-0.052	0.167	0.719	0.024	-0.183
5	0.075	0.276	0.07	0.095	0.749
6	0.145	0.082	-0.15	0.771	0.057
14	0.742	0.256	0.201	0.073	0.101
15	0.803	0.234	0.211	-0.061	0.087
16	0.827	0.196	0.166	0.023	0.055
17	0.775	0.296	0.037	0.164	0.025
18	0.813	0.173	-0.056	0.126	0.085
19	0.762	0.053	-0.039	0.153	-0.124
20	0.828	0.127	-0.068	0.058	-0.063
7	0.213	0.692	0.116	0.046	-0.13
8	0.132	0.794	0.138	0.14	-0.024
9	0.16	0.751	0.212	-0.043	0.114
10	0.28	0.683	-0.192	0.034	0.138
11	0.294	0.541	0.024	0.093	-0.07
12	0.151	0.287	0.108	0.549	0.156
13	0.042	0.082	0.038	0.874	-0.057
14	0.034	0.381	0.094	-0.021	-0.684

Note: Extraction Method: Principal Component Analysis.
Rotation Method: Oblique
a Rotation converged in 5 iterations.

Using these component matrixes, I then determined which items will then load on each factor in our in our model. After performing the initial EFA, we ran an EFA model in Amos 25.0 to examine the factor structure. I initially ran a 5-factor structure as featured in table 16.

Table 16.

5-Factor Model Loadings				
Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
14	7	1	6	4
15	8	2	12	5
16	9	3	13	
17	10			
18	11			
19				
20				

Through running this EFA model, there was an issue that Factor 5 was unspecified. Due to this complication, I ran a 4-factor model since the EFA was inconclusive on whether a 4-factor or 5-factor model was more appropriate. The investigator's ran the 4-factor model based on the factor loadings seen in Table 17. The running of this EFA produced the model seen in Figure 2.

Table 17.

4-Factor Model Loadings			
Factor 1	Factor 2	Factor 3	Factor 4
14	7	1	6
15	8	2	12
16	9	3	13
17	10		
18	11		
19	4		
20	5		

Figure 2.

EFA Model

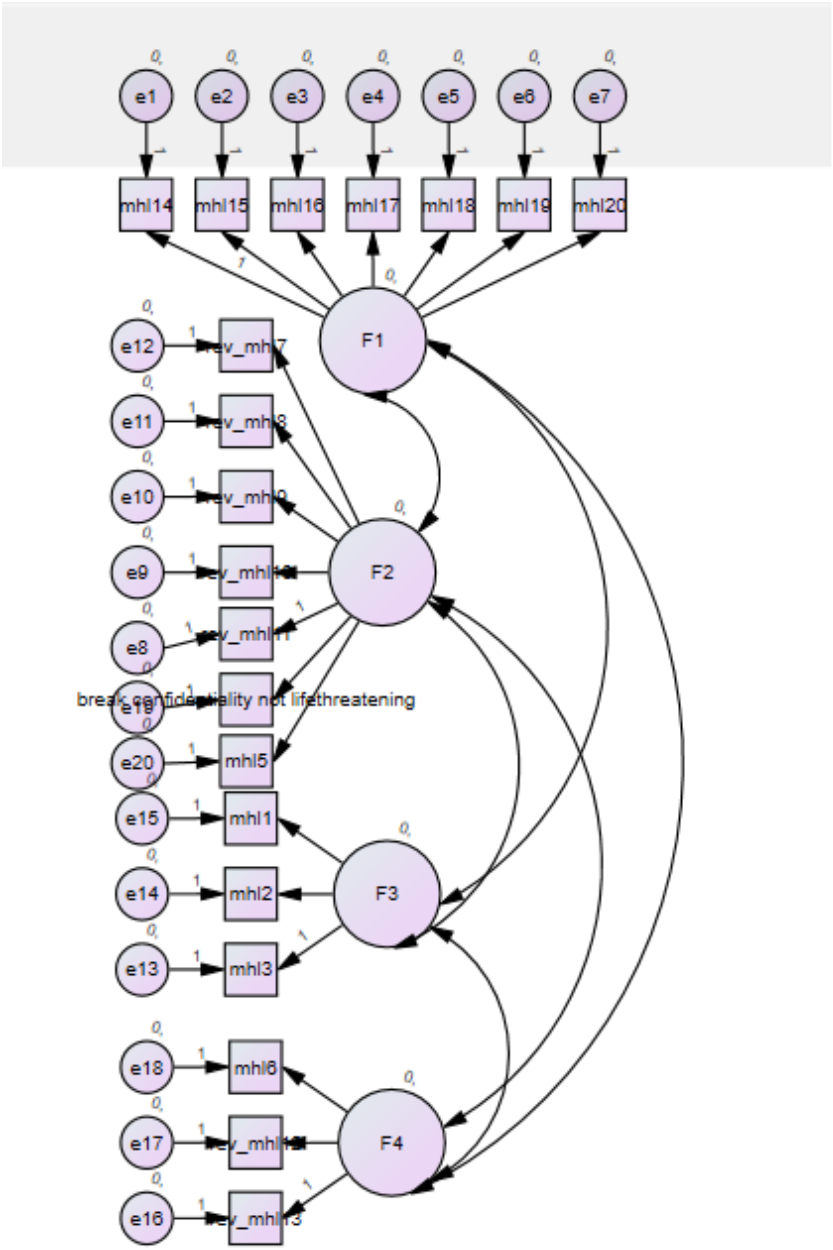


Table 18.

Fit Indexes for EFA Model

Model	CFI	CMIN	DF	PCMIN/DF	RMSEA
Default	.88	300.48	164	1.83	.08
Saturated	1.00	0.00	0	-.--	-.--
Independence	.00	210.00	0	6.47	.00

In Table 18 there is a CFI of .881, and RMSEA of .075 which both demonstrate an acceptable fit. While the PCMIN/DF was under 2.0 which illustrates a good model fit. Considering the relatively low sample size, the 4-factor model is acceptable.

Chapter V Discussion:

This study examined the relationship between MHL, stigma, and masculinity in collegiate athletes and their non-college athlete peers. Although there have been many studies examining MHL and stigma, few studies have included masculinity as a variable that relates to MHL. Furthermore, few studies have examined MHL in student-athletes. The data for this study was collected by utilizing the MHLS-SF (Bowman. 2018) and the CMNI-short (Levant et al, 2019). This study has revealed several interesting results that warrant a thorough discussion. Through the course of this discussion, I will analyze the results, discuss the theoretical and practical implications, as well as examine the limitations and future studies.

This study found that there is a strong correlation between masculinity, MHL, and stigma. Results supported three hypotheses:

H1: Masculinity has a negative correlation with mental health literacy.

H2: Mental Health Literacy has a negative correlation with mental health stigma.

H3: Masculinity has a positive correlation with stigma.

There is a strong negative correlation between MHL and masculinity (-.365**) in college students. This results support Hypothesis 1. This is an important finding for many reasons. First, this shows that it could be the sociological norms that could be impacting MHL and not just an individual's gender in and of itself. This furthers existing data concerning mental health and masculinity. High conformity to masculine norms has been shown to increase risk of suicidal thinking (Pirkis et al., 2016). Furthermore,

masculinity has been connected to a low likelihood of help-seeking behavior (Seidler et al., 2018).

Secondly, there is a negative correlation between MHL and mental health stigma (-.846). This means that an individual with a lower MHL is more likely to feel stigmatized when it comes to their mental health. This is an important finding because stigmatization is both implicit and explicit. While psychologist and epidemiologist may not be able to control explicit stigma, through training and MHL intervention it may be possible to influence implicit stigma. This is significant because it is consistent with research conducted on MHL. MHL has consistently been shown to reduce stigma in adults (Jorm, 2002; Bowman, 2018; Jorm, 2002; Farrer et al., 2008). The data also suggest that this relationship between MHL and stigma is similar in athletes as well as their non-athlete peers.

Lastly data supports the third hypothesis that masculinity has a positive correlation with mental health stigma (.410). This finding has a sociological implication that needs to be further examined in future studies. Due to a high relationship between masculinity and stigma, it challenges the way that society interprets masculine norms. This is consistent with the literature concerning these two constructs. Research suggests that strict adherence to these masculine norms is related to increased stigma, depression, and anxiety (Chatmon, 2020). Furthermore, mental illness is more likely to go untreated in men due to the lower likelihood of men to seek mental health treatment (Mental Health America, 2020).

Furthermore, results partially support hypothesis 4 while results do not support Hypothesis 5.

H4: There is a significant difference between men and women in masculinity, MHL, and stigma.

H5: There is a significant difference between athletes and their non-athlete peers in masculinity, MHL, and stigma.

With hypothesis 4 there is a significant difference between men and women in the non-athlete group, however there is not a significant difference in the athlete group. This could likely be due to the sociological norms that are set on athletes. Many women athletes are taught similar traits as men through sport. They are also taught many of the traditional masculine norms of winning, and violence, and the importance of success. Due to these reasonings, it is not surprising that there is not a significant difference between men and women in our athlete group.

The preliminary analysis examined the relationship between masculinity, stigma, and MHL in non-athlete college-students. These relationships were also examined in college athletes. Through a correlation analysis, results suggest support for the three hypotheses made. However, the correlation between masculinity and MHL in college athletes was only significant at the ($p<.005$) significance level compared to their non-athlete peers ($p<.01$).

After running the correlation analyses, several T-tests were run to examine the differences in the means between college athletes and non-athletes. Further independent samples T-tests were run to examine the differences in the means between men and women based on whether they are student-athletes or students.

Through this analysis results suggest that there was no significant difference in the means between athletes and non-athletes.

These results are interesting because it goes against what several studies have shown. Student athletes have been shown to be far less likely to seek treatment than non-athlete students (Eisenberg, 2014). Furthermore, stigma has been identified as a primary barrier to student-athletes seeking mental health care and treatment (Gulliver et al., 2012; Moreland et al., 2018; Chow et al., 2020). However, the data in this study suggest that there is no significant difference between athletes and non-athletes when it comes to MHL, stigma and masculinity.

This study revealed interesting results in the next analysis. The non-athlete group had significant differences in means for masculinity and stigma. This finding is important because the literature shows that generally men have lower MHL than women do (Furnham et al., 2014; Hadjimina & Furnham, 2017). This study suggests that male college-athletes might be an exception to the generalization that men on average have lower MHL than women. Furthermore, data also suggest that there is not a significant difference in masculinity and stigma amongst the genders in college athletes. Once again this is counter to what previous literature and this current study suggests in the general population (Bradbury, 2020).

Factor Analysis

This study utilized the MHLS-SF (Bowman, 2018) to evaluate the participants summative MHL scores. Though this scale has high internal consistency (a=.84), there is some dispute concerning the number of factors both in this scale and the original

Mental Health Literacy Scale (O'Conner, 2015). To even further validate this scale this study aimed to extract factors for this scale to test the variability amongst the observed variables.

There are two main types of factor analysis: CFA and EFA. Thompson (2005) states that EFA should be used when there is not sufficient theory present. Due to there not being a sufficient amount of theory present concerning the number of factors for the MHL, this study ran an EFA to determine the number of factors to extract for our model.

The EFA yielded interesting results. Previous factor analysis using the Mental Health Literacy Scale and MHLS-SF have produced 4-factor models (Simkiss et al., 2021), 3-factor models (Jung et al., 2016) and 5-factor models (Bowman, 2018). After running a scree plot and analyzing the results it was decided that a 5-factor model would be appropriate. It is common to extract factors that have an eigenvalue above 1.4 (Thompson, 2005; Bowman, 2018). Through this analysis I deemed that a 4-factor model might be more appropriate. Due to the uncertainty for factor extraction the PI ran both a 4-factor and 5-factor CFA to determine which model had the best fit.

I originally ran the 5-factor model using the factor loadings generated in our exploratory factor analysis. Through this EFA model the results came back as unidentified. The suspicion is that this was due to only having two-items loading onto the 5th factor. After the results came back as unidentified, a 4-factor model was run using the same factor loading. The two items that loaded on factor 5 in the first model were loaded onto factor 2 in this new analysis. This EFA model showed an acceptable

model fit with an RMSEA under .8, a CFI near .90 and a Chi-squared/DF that was less than 2.0.

Implications

This study adds many theoretical and practical implications to the scholarship regarding MHL, masculinity and stigma. The first and primary theoretical implication is that this study adds to the literature regarding MHL. To date there have been few studies that examine MHL in collegiate athletes, and fewer studies that examine the relationship that MHL has with stigma in collegiate athletes (Beasley, et al., 2020; Bullivant et al., 2020; Chow et al., 2020; Cheng et al.,2018; Gulliver, et al., 2019).

Specifically, this study has significant theoretical implications due to the exploratory factor analysis that was conducted on the MHLS-Short. Although MHL has received a significant amount of research over the last decade there is still debate concerning an appropriate scale (Bowman, 2018; O'Conner, 2015). While Jorm's definition of MHL has become a gold standard, there is still debate over the constructs of MHL (Coles et al., 2016, Jorm, 2012; Spiker & Hammer, 2021).

Through the EFA conducted in this study, the aim is to supplement the literature to present a thorough theory concerning MHL. Klein and Zedeck (2004) state "good theory presents clearly defined constructs and offers clear, thorough, and thoughtful explanations on how and why the constructs are linked" (p. 932). Furthermore, the constructs need to be identified, defined, and articulated (Spiker & Hammer, 2021). Theory building involves exploration, explanation, and validation (Kerssens-van Drongelen, 2001). Although, this study does not meet these qualifications for theory, it

does aid the literature regarding MHL theory by suggesting that MHL is a four or five factor construct.

While there are several theoretical implications from this study, there are also several practical implications. MHL has been identified as a barrier to help seeking amongst high school and college athletes. When MHL is increased, the likelihood of seeking help increases as well (Gulliver et al., 2012). Therefore, if MHL can be increased through intervention methods, there is the opportunity to increase treatment seeking tendencies. Research has shown that MHL can be increased through intervention methods. Several studies have shown that programs that target MHL in athletes have increased the knowledge of mental disorders and improved the attitudes toward those with mental illness (Bapat et al., 2009; Chow et al., 2020; Kern et al., 2017). These studies utilized pre- to post-intervention methodologies to measure the increase in knowledge and attitudes among athletes.

By identifying that there is a relationship between MHL and stigma, this better allows practitioners to address the issues that might be present. As stigma is correlated with MHL, previous research suggests that there is a significant correlation between stigma and treatment seeking tendencies. Furthermore, studies have shown that intervention methods can improve help-seeking attitudes toward seeking professional help as well as self-stigma (Chow et al., 2020).

Data suggests that there is a significant relationship between MHL and stigma. Data also suggests that through intervention methods MHL can be increased and stigma can be decreased. Therefore, it may be appropriate for athletic directors to take opportunities to promote MHL training and knowledge among their athletes. With

mental health illnesses becoming more frequent in college-students (WHO, 2021), it is crucial for practitioners to promote behaviors that will aid in dealing with mental illness.

Secondly, this study adds a practical implication by implying a relationship between masculinity and MHL. Research has identified that there is a relationship between MHL and gender (Bowman, 2018; Jorm, 2012), this study suggests that there is a relationship between masculinity and MHL. While gender is categorical, masculinity is a continuous variable. This is significant because an individual can identify as female but have a higher masculinity score than an individual who identifies as a male. This implies that it would not be advantageous to solely focus on gender when evaluating MHL and stigma but focus on the characteristics and masculine norms that might impact MHL and stigma.

Limitations

Although this manuscript sought to provide a thorough methodology for this study, there were still several limitations. The first limitation of our study was a relatively small sample size. Typically for studies utilizing a survey methodology, it is common to aim for five to ten participants for every item on the survey. The scales utilized in this study consisted of a total of 55 items. Using the aforementioned criteria, the investigators would have liked to have had at least 250 participants. However, we were able to obtain a good internal reliability and consistency making our sample size acceptable.

This limitation is a very important point to make. While sex is based off of anatomical makeup, masculinity and conformity to those masculine norms define what

the individual truly believes about themselves. Although men on average have lower MHL scores then women, biologically there is no explanation for why this trend is seen (Bowman, 2018; Jorm et al., 1997). This means that there must be a psychological or sociological explanation as to why men on average have a lower MHL score.

To this point, an individual who identifies as a female could conform to more traditional masculine norms than someone who identifies as a male. This study illustrates that those that have a higher conformity to masculine norms, are more likely to have a lower MHL score regardless of gender. In fact, there is a stronger correlation between masculinity and MHL than there is even to gender and MHL.

Secondly the demographics of my study were slightly skewed and did not match the general population of college students and college athletes. This sample came from a private Christian University that is predominantly white. Over 85% of the participants identified as Christian, while 68% of the participants were white. These demographics do not match the general population. Furthermore, socioeconomic status has been shown to play a role in mental health literacy. Nearly half of the participants have a household income of over $75,000 a year and would be considered middle class or higher. Once again this does not match that of the general population and therefore could be a limitation to this study.

Additionally, this study was conducted using a cross-sectional design to measure baseline results for each construct. This is a possible limitation because it does not allow for this study to establish causation. Furthermore, a longitudinal study has the potential to yield more accurate results to examine if MHL specifically improves over time specifically in student-athletes.

Future Studies

Although this study presents many practical and theoretical implications, this study paves the way for future research concerning MHL, stigma and masculinity. Throughout this section, I discuss the areas for future research and how the literature can be further supplemented through subsequent studies.

This study was rooted is positivism and took a quantitative examination of mental health literacy in college students and collegiate athletes. While there is a significant need for a quantitative analysis of mental health literacy, there is also a great need for a qualitative inquiry into MHL as well as stigma and masculinity. Specifically, an ethnographic approach examining these constructs would be greatly appropriate.

While there have been several quantitative studies examining stigma, masculinity, and treatment seeking attitudes; there have been few studies operating under a qualitative analysis framework. Due to the subjective nature of the meaning of stigma and masculinity, qualitative inquiry would be appropriate. Furthermore, it is critical to outline that when it comes to stigmatization there can be implicit and explicit stigma. Implicit stigma is characterized as depending more on the subconscious beliefs associated toward a specific activity (Greenwald & Banaji, 1995). Explicit stigma is the more controllable and conscious aspect of stigma (Wahto et al., 2016). Although there have been many scales developed to measure implicit and explicit stigma (Greenwald et al., 1998; Delenardo & Terrion, 2014), there is still some debate amongst the validity of these measures. A meta-analysis (Hoffmann et al., 2005) discovered that there were weak correlations between implicit and explicit stigma. These weak correlations

suggests that although previous research identified two forms of stigma, stigma is a complex construct that might need to be examined more subjectively.

Secondly, the results of this study opened the door for research in several secondary aspects of this study. One interesting result is that there was a high correlation in athletes between being a Christian and their masculinity score (.484). Future studies can examine qualitatively why this correlation might exist. This high correlation is not surprising considering the roots of Muscular Christianity which sought to merge the ideas of sport, Christianity, and masculinity (Putney, 2009).

Future studies could specifically examine the relationship between MHL, masculinity, and stigma in college-athletes that are part of the LGB+ community. There has been ample research examining gay athletes specifically in regards to masculinity (Anderson, 2002; Connell, 1995). However there have been few studies examining mental health literacy and mental health stigma in athletes that identify as LGB+. Individuals in the LGBT+ community often experience higher rates of mental health illness such as anxiety, depression and substance abuse than heterosexual and cisgender individuals (Marshall & Cahill, 2021). Furthermore, there is great need to more thoroughly examine mental-health stigma and MHL in gay athletes.

Lastly, future studies could benefit greatly from attempting to use an intervention and administer a pre-intervention and post-intervention survey to examine if the intervention raises mental health literacy, or lowers masculinity, or stigma. Interventions might consist of mental health training seminars brought in for athletes. Secondarily there are many psychological frameworks such as the disconnected values model

which provides and intervention model for health that could possibly be utilized in mental health intervention (Anshel, 2008).

Conclusion

The purpose of this dissertation was two-fold. The first was to investigate the relationship between masculinity, MHL and stigma. The second purpose was to explore MHL and to investigate the constructs that make up MHL. This study sought to increase awareness surrounding mental health illness in collegiate athletes. Mental illness amongst collegiate athletes is a significant and pertinent topic. Suicide is the 2nd leading cause of death among college athletes and this is an issue that can be reduced with increased awareness.

Through this study, the investigators sought to illustrate the importance that MHL had in reducing stigma amongst collegiate athletes. Secondly this study investigated the relationship masculinity has on MHL and stigma. The literature illustrates the relationship between masculinity and sport has historically been prevalent. There is reason to believe that masculinity is still inherently associated with athletics. With this association and relationship, it is significant to study the impact that conformity to masculine norms has on MHL. Specifically, the impact that hegemonic masculinity has on MHL and stigma.

The data suggested a significant relationship between masculinity, MHL and stigma in college-students as well as collegiate athletes. The hypotheses made were supported by providing empirical data. Although this study answered the need for additional research in MHL, masculinity, and stigma in college athletes (Chow et al.,

2021; Bowman, 2018), there is still a great need for further research involving masculinity, MHL, and stigma in college athletes.

In this dissertation, I have thoroughly examined MHL, masculinity, and stigma, as well as the relationship that they have with each other. Specifically, I have examined these constructs in college athletes and their non-athlete peers. Through the findings from this dissertation, we can see that MHL has a significant relationship with masculinity and stigma. This is significant because I have established at the introduction of this dissertation that college athletes are at an enhanced risk of suffering from mental illness, and are less likely to seek treatment. Through the results and findings of this dissertation it aids in drawing the conclusion that the stigma and masculinity associated with being an athlete could be stopping athletes from seeking mental health treatment. Furthermore, MHL interventions could be extremely helpful in lowering stigma in college athletes therefore possibly raising the possibility of an athlete seeking mental health treatment.

WORKS CITED

Adams, K., & Corrigan, J. M. (2003). Priority areas for quality improvement. In *Priority areas for national action: transforming health care quality*. National Academies Press (US).

American College Health Association. (2019). *National college health assessment*. Retrieved from: https://www.acha.org/documents/ncha/NCHA-II_SPRING_2019_US_REFERENCE_GROUP_EXECUTIVE_SUMMARY.pdf [Google Scholar]

Anderson, E. (2002). Openly gay athletes: Contesting hegemonic masculinity in a homophobic environment. *Gender & society*, *16*(6), 860-877.

Anderson, Eric. 2005. “Orthodox and Inclusive Masculinity: Competing Masculinities among Heterosexual Men in a Feminized Terrain.” *Sociological Perspectives* 48 (3): 337–355.

Anshel, M. H. (2008). The disconnected values model: Intervention strategies for exercise behavior change. *Journal of Clinical Sport Psychology*, *2*(4), 357-380.

Arnold, P. J. (1994). Sport and moral education. *Journal of moral education*, *23*(1), 75-89.

Bapat, S., Jorm, A., & Lawrence, K. (2009). Evaluation of a mental health literacy training program for junior sporting clubs. *Australasian Psychiatry, 17*, 475-479.

Bathje, G., & Pryor, J. (2011). The relationships of public and self-stigma to seeking mental health services. *Journal of Mental Health Counseling*, *33*(2), 161-176.

Beasley, L., Kiser, R., & Hoffman, S. (2020). Mental health literacy, self-efficacy, and stigma among college students. *Social Work in Mental Health*, *18*(6), 634-650.

Blazina, C., Settle, A. G., & Eddins, R. (2008). Gender role conflict and separation-individuation difficulties: Their impact on college men's loneliness. *The Journal of Men's Studies*, *16*(1), 69-81.

Blazina, C., & Watkins Jr, C. E. (1996). Masculine gender role conflict: Effects on college men's psychological well-being, chemical substance usage, and attitudes towards help-seeking. *Journal of Counseling Psychology*, *43*(4), 461.

Bowman, A. S. (2018). *An examination of mental health literacy and stigma against mental illness using an item response theory approach* (Doctoral dissertation, Middle Tennessee State University).

Bradbury, A. (2020). Mental health stigma: the impact of age and gender on attitudes. *Community mental health journal*, *56*(5), 933-938.

Bullivant, B., Rhydderch, S., Griffiths, S., Mitchison, D., & Mond, J. M. (2020). Eating disorders "mental health literacy": a scoping review. *Journal of Mental Health*, *29*(3), 336-349.

Carragher, N., Adamson, G., Bunting, B., & McCann, S. (2010). Treatment-seeking behaviors for depression in the general population: results from the National

Epidemiologic Survey on Alcohol and Related Conditions. *Journal of affective disorders*, *121*(1-2), 59-67.

Chatmon, B. N. (2020). Males and mental health stigma. *American Journal of Men's Health*, *14*(4),

Cheng, H. L., Wang, C., McDermott, R. C., Kridel, M., & Rislin, J. L. (2018). Self-stigma, mental health literacy, and attitudes toward seeking psychological help. *Journal of Counseling & Development*, *96*(1), 64-74.

Chow, G. M., Bird, M. D., Gabana, N. T., Cooper, B. T., & Becker, M. A. S. (2020). A program to reduce stigma toward mental illness and promote mental health literacy and help-seeking in National Collegiate Athletic Association Division I student-athletes. *Journal of Clinical Sport Psychology*, *15*(3), 185-205.

Coles ME, Ravid A, Gibb B, et al. (2016). Adolescent mental health literacy: young people's knowledge of depression and social anxiety disorder. J Adolesc Health, 58, 57–62.

Connell, R. W. (2005). Change among the gatekeepers: Men, masculinities, and gender equality in the global arena. *Signs: Journal of Women in Culture and Society*, *30*(3), 1801-1825.

Connell, R. W., & Messerschmidt, J. W. (2005). Hegemonic masculinity: Rethinking the concept. *Gender & society*, *19*(6), 829-859.

Connell, R. W. 1987. Gender and power. Palo Alto, CA: Stanford

Corrigan, P. W. (1998). The impact of stigma on severe mental illness. *Cognitive and behavioral practice*, *5*(2), 201-222.

Corrigan, P. (2004). How stigma interferes with mental health care. *American psychologist*, *59*(7), 614

Delenardo, S., & Terrion, J. L. (2014). Suck it up: Opinions and attitudes about mental illness stigma and help-seeking behaviour of male varsity football players. *Canadian Journal of Community Mental Health*, *33*(3), 43-56.

Donohue, B., Gavrilova, Y., Galante, M., Gavrilova, E., Loughran, T., Scott, J., ... & Allen, D. N. (2018). Controlled evaluation of an optimization approach to mental health and sport performance. *Journal of Clinical Sport Psychology*, *12*(2), 234-267.

Eisenberg, D. (2014). Developing and evaluating a model program for supporting the mental health of student athletes. *NCAA Innovations Grant Final Report*.

English, C. (2017). Toward sport reform: Hegemonic masculinity and reconceptualizing competition. *Journal of the Philosophy of Sport*, *44*(2), 183-198.

Farrer, L., Leach, L., Griffiths, K. M., Christensen, H., & Jorm, A. F. (2008). Age differences in mental health literacy. *BMC Public Health*, *8*(1), 1-8.

Furnham, A., Annis, J., & Cleridou, K. (2014). Gender differences in the mental health literacy of young people. *International Journal of Adolescent Medicine and Health*, *26*(2), 283-292.

Gill, E. L. (2009). The blunt truth: Marijuana use by college athletes and the role of social workers. *Journal of Social Work Practice and Addictions, 9*, 140-143.

Goffman, E. (1963). Stigma: Notes on the management of spoiled identity. New York: Simon & Schuster.

Gulliver, A., Farrer, L., Bennett, K., & Griffiths, K. M. (2019). University staff mental health literacy, stigma and their experience of students with mental health problems. *Journal of Further and Higher Education*, *43*(3), 434-442.

Graydon, J. (1983). 'But it's more than a Game. It's an Institution. 'Feminist Perspectives on Sport. *Feminist Review*, *13*(1), 5-16.

Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: attitudes, self-esteem, and stereotypes. *Psychological review*, *102*(1), 4

Groeschel, B. L., Wester, S. R., & Sedivy, S. K. (2010). Gender role conflict, alcohol, and help seeking among college men. *Psychology of Men & Masculinity*, *11*(2), 123.

Hadjimina, E., & Furnham, A. (2017). Influence of age and gender on mental health literacy of anxiety disorders. *Psychiatry Research*, *251*, 8-13.

Hofmann, W., Gawronski, B., Gschwendner, T., Le, H., & Schmitt, M. (2005). A meta-analysis on the correlation between the Implicit Association Test and explicit self-report measures. *Personality and Social Psychology Bulletin*, *31*(10), 1369-1385.

Jorm AF, Korten AE, Jacomb PA, et al. (1997). Mental health literacy: A survey of the public's ability to recognize mental disorders and their beliefs about the effectiveness of treatment. Med J Austr, 166, 182–6.

Jorm, A. F., Korten, A. E., Rodgers, B., Jacomb, P. A., & Christensen, H. (2002). Sexual orientation and mental health: results from a community survey of young and middle–aged adults. *The British Journal of Psychiatry*, *180*(5), 423-427.

Jorm, A. F. (2012). Mental health literacy: empowering the community to take action for better mental health. *American psychologist*, *67*(3), 231.

Jung, H., von Sternberg, K., & Davis, K. (2016). Expanding a measure of mental health literacy: Development and validation of a multicomponent mental health literacy measure. *Psychiatry research*, *243*, 278-286.

Klein KJ, Zedeck S. (2004). Theory in applied psychology: Lessons (re)learned. J Appl Psychol, 89, 931–3.

Kerssens-van Drongelen I. (2001). The iterative theory-building process: Rationale, principles and evaluation. Manag Decis, 39, 503–12.

Levant, R. F., McDermott, R., Parent, M. C., Alshabani, N., Mahalik, J. R., & Hammer, J. H. (2020). Development and evaluation of a new short form of the Conformity to Masculine Norms Inventory (CMNI-30). *Journal of Counseling Psychology*, *67*(5), 622.

Levant, R. F., Wimer, D. J., Williams, C. M., Smalley, K. B., & Noronha, D. (2009). The relationships between masculinity variables, health risk behaviors and attitudes toward seeking psychological help. *International Journal of Men's Health*, *8*(1), 3.

Kern, A., Heininger, W., Klueh, E., Salazar, S., Hansen, B., Meyer, T., & Eisenberg, D. (2017). Athletes connected: Results from a pilot project to address knowledge and attitudes about mental health among college student-athletes. *Journal of Clinical Sport Psychology, 11*, 324-336.

Kidd, Bruce. 1990. “The Men’s Cultural Centre: Sports and the Dynamic of Women’s Oppression/Men’s Repression.” In *Sport, Men, and the Gender Order: Critical Feminist Perspectives*, edited by Michael A. Messner and Donald F. Sabo, 31–43. Champaign, IL: Human Kinetics.

Komiya, N., Good, G., & Sherrod, N. (2000). Emotional openness as a predictor of college students’ attitudes toward seeking psychological help. *Journal of Counseling Psychology*, *47*, 138-143. doi:10.1037/0022-0167.47.1.138

López, R. L., & Levy, J. J. (2013). Student athletes' perceived barriers to and preferences for seeking counseling. *Journal of College Counseling*, *16*(1), 19-31.

Mackenzie, C.S., Knox, J.V., Gekoski, W.L., & Macaulay, H.L. (2004). An adaptation and extension of the attitudes toward seeking professional psychological help scale. *Journal of Applied Social Psychology, 34,* 2410-2435.

Mahalik, J. R., Locke, B. D., Ludlow, L. H., Diemer, M. A., Scott, R. P., Gottfried, M., & Freitas, G. (2003). Development of the conformity to masculine norms inventory. *Psychology of men & masculinity*, *4*(1), 3.

Mahalik, J. R., Pierre, M. R., & Wan, S. S. (2006). Examining racial identity and masculinity as correlates of self-esteem and psychological distress in black men. *Journal of Multicultural Counseling and Development*, *34*(2), 94-104.

Marshall, A., & Cahill, S. (2021). Barriers and opportunities for the mental health of LGBT older adults and older people living with HIV: a systematic literature review. *Aging & mental health*, 1-10.

Martin, G. L., Vause, T., & Schwartzman, L. (2005). Experimental studies of psychological interventions with athletes in competitions: Why so few?. *Behavior modification*, *29*(4), 616-641.

Mehta, N., Kassam, A., Leese, M., Butler, G., & Thornicroft, G. (2009). Public attitudes towards people with mental illness in England and Scotland, 1994–2003. *The British Journal of Psychiatry*, *194*(3), 278-284.

Mental Illness. (2021). Retrieved 23 March 2022, from https://www.nimh.nih.gov/health/statistics/mental-illness

Mental health: strengthening our response. (2018). Retrieved 23 March 2022, from https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response

Messner, M. A. (1990). Men studying masculinity: Some epistemological issues in sport sociology. *Sociology of Sport Journal*, *7*(2), 136-153.

Messner, M. A. (2002). *Taking the field: Women, men, and sports* (Vol. 4). U of Minnesota Press.

Möller-Leimkühler, A. M. (2002). Barriers to help-seeking by men: a review of sociocultural and clinical literature with particular reference to depression. *Journal of affective disorders*, *71*(1-3), 1-9.

Moore, M. (2017). Stepping outside of their comfort zone: Perceptions of seeking behavioral health services amongst college athletes. *Journal of Issues in Intercollegiate Athletics*, *2017*(Special Issue), 130-144.

Moore, M. A. (2016). Do psychosocial services make the starting lineup? Providing services to college athletes. *Journal of Amateur Sport, 2*(2), 50-74.

Moreland, J. J., Coxe, K. A., & Yang, J. (2018). Collegiate athletes' mental health services utilization: A systematic review of conceptualizations, operationalizations, facilitators, and barriers. *Journal of sport and health science*, *7*(1), 58-69.

Myers, A. M., & Lips, H. M. (1978). Participation in competitive amateur sports as a function of psychological androgyny. *Sex Roles*, *4*(4), 571-578.

O'Connor, M., & Casey, L. (2015). The Mental Health Literacy Scale (MHLS): A new scale-based measure of mental health literacy. *Psychiatry research*, *229*(1-2), 511-516.

O'Neil, J. M. (2008). Summarizing 25 years of research on men's gender role conflict using the Gender Role Conflict Scale: New research paradigms and clinical implications. *The counseling psychologist*, *36*(3), 358-445.

Phelan, J. C., Link, B. G., Stueve, A., & Pescosolido, B. A. (2000). Public conceptions of mental illness in 1950 and 1996: What is mental illness and is it to be feared?. *Journal of Health and Social behavior*, 188-207.

Putney, C. (2009). *Muscular Christianity: Manhood and sports in protestant America, 1880-1920*. Harvard University Press

Pompili, M., Mancinelli, I., & Tatarelli, R. (2003). Stigma as a cause of suicide. *The British Journal of Psychiatry*, *183*(2), 173-174.

Ramaeker, J., & Petrie, T. A. (2019). "Man up!": Exploring intersections of sport participation, masculinity, psychological distress, and help-seeking attitudes and intentions. *Psychology of Men & Masculinities*, *20*(4), 515.

Ratzan, S. C., & Parker, R. M. (2000). Health literacy. *National library of medicine current bibliographies in medicine. Bethesda: National Institutes of Health, US Department of Health and Human Services*.

Reid, H. L. (2007). Sport and moral education in Plato's Republic. *Journal of the Philosophy of Sport*, *34*(2), 160-175.

Sheehan, R. B., Herring, M. P., & Campbell, M. J. (2018). Associations between motivation and mental health in sport: A test of the hierarchical model of intrinsic and extrinsic motivation. *Frontiers in psychology*, *9*, 707.

Shepard, D. S. (2002). A negative state of mind: Patterns of depressive symptoms among men with high gender role conflict. *Psychology of Men & Masculinity*, *3*(1), 3

Sibicky, M., & Dovidio, J. F. (1986). Stigma of psychological therapy: Stereotypes, interpersonal reactions, and the self-fulfilling prophecy. *Journal of Counseling Psychology*, *33*(2), 148.

Simkiss, N. J., Gray, N. S., Dunne, C., & Snowden, R. J. (2021). Development and psychometric properties of the Knowledge and Attitudes to Mental Health Scales (KAMHS): a psychometric measure of mental health literacy in children and adolescents. *BMC pediatrics*, *21*(1), 1-10.

Smiler, A. P. (2004). Thirty years after the discovery of gender: Psychological concepts and measures of masculinity. *Sex roles*, *50*(1), 15-26.

Smith, R. A. (2007). Language of the lost: An explication of stigma communication. *Communication Theory*, *17*(4), 462-485.

Smith, A. (2018). Depression and suicide in professional sports work. In *Sport, mental illness, and sociology*. Emerald Publishing Limited.

Smith, R. A., & Applegate, A. (2018). Mental health stigma and communication and their intersections with education. *Communication Education*, *67*(3), 382-393.

Spiker, D. A., & Hammer, J. H. (2021). A model of intention to provide mental health first aid in college students. *Journal of Mental Health*, *30*(3), 276-283.

Steinfeldt, J. A., Gilchrist, G. A., Halterman, A. W., Gomory, A., & Steinfeldt, M. C. (2011). Drive for muscularity and conformity to masculine norms among college football

Stevenson, B. (2007). Title IX and the evolution of high school sports. *Contemporary Economic Policy*, *25*(4), 486-505.

Vella, S. A., Benson, A., Sutcliffe, J., McLaren, C., Swann, C., Schweickle, M. J., ... & Bruner, M. (2021). Self-determined motivation, social identification and the mental health of adolescent male team sport participants. *Journal of Applied Sport Psychology*, *33*(4), 452-466.

Verbrugge, Martha H. 1988. *Able-bodied Womanhood: Personal Health and Social Change in Nineteenth-century Boston*. New York: Oxford University Press.

Vertinksy, Patricia. 1989. *The Eternally Wounded Woman: Women, Doctors, and Exercise in the Late Nineteenth Century*. Manchester: Manchester University Press.

Vogel, D. L., Wade, N. G., & Haake, S. (2006). Measuring the self-stigma associated with seeking psychological help. *Journal of counseling psychology*, *53*(3), 325.

Wahto, R. S., Swift, J. K., & Whipple, J. L. (2016). The role of stigma and referral source in predicting college student-athletes' attitudes toward psychological help-seeking. *Journal of Clinical Sport Psychology*, *10*(2), 85-98.

Watson, N. J., Weir, S., & Friend, S. (2005). The development of muscular Christianity in Victorian Britain and beyond. *Journal of religion and society*, *7*.

Wong, Y. J., Owen, J., Tran, K. K., Collins, D. L., & Higgins, C. E. (2012). Asian American male college students' perceptions of people's stereotypes about Asian American men. *Psychology of Men & Masculinity*, *13*(1), 75.

Wolanin, A., Hong, E., Marks, D., Panchoo, K., & Gross, M. (2016). Prevalence of clinically elevated depressive symptoms in college athletes and differences by gender and sport. *British journal of sports medicine*, *50*(3), 167-171

Appendix A

Demographics

Age (years)	_____
Ethnicity ◯ Hispanic or Latino ◯ NOT Hispanic or Latino ◯ Unknown / Not Reported	
Race	◯ American Indian/Alaska Native ◯ Asian ◯ Native Hawaiian or Other Pacific Islander ◯ Black or African American ◯ White ◯ More Than One Race ◯ Unknown / Not Reported
Gender	◯ Female ◯ Male ◯ Other ◯ Prefer not to say

Are you a college athlete?

Yes No

If so, what sport do you play?

Family Socioeconomic status

$25,000- $50,000

$50,000-75,000

$75,000- 100,000

Over $100,000

Revised-Mental Health Literacy Scale

The purpose of these questions is to gain an understanding of your knowledge of various aspects to do with mental health. When responding, we are interested in your degree of knowledge. Therefore when choosing your response, consider that:

Very unlikely = I am certain that it is NOT likely
Unlikely = I think it is unlikely but am not certain
Likely = I think it is likely but am not certain
Very Likely = I am certain that it IS very likely

1. If someone experienced excessive worry about a number of events or activities where this level of concern was not warranted, they had difficulty controlling they worry, and had physical symptoms such as tense muscles and feeling fatigued, then to what extent do you think it is likely that they have **Generalized Anxiety Disorder**?

   Very unlikely Unlikely Likely Very Likely

2. To what extent do you think it is likely that the diagnosis of **Bipolar Disorder** includes experiencing periods of elevated (i.e., high) and periods of depressed (i.e., low) mood?

   Very unlikely Unlikely Likely Very Likely

3. Mental health professionals are bound by confidentiality; however there are certain conditions under which this does not apply. To what extent do you think it is likely a mental health professional would be allowed to **break confidentiality** *if you were at immediate risk of harm to yourself or others?*

   Very unlikely Unlikely Likely Very Likely

4. Mental health professionals are bound by confidentiality; however there are certain conditions under which this does not apply. To what extent do you think it is likely a mental health professional would be

allowed to **break confidentiality** *if your problem is not life-threatening, and they want to assist others to better support you?*

Very unlikely Unlikely Likely Very Likely

Please indicate to what extent you agree with the following statements:

	Strongly Disagree	Disagree	Agree	Strongly agree
5. I am confident using the computer or telephone to seek information about mental illness.				
6. I am confident attending face to face appointments to seek information about mental illness (e.g., primary care provider, mental health counselor, etc.).				
7. People with a mental illness could snap out if it if they wanted				
8. A mental illness is a sign of personal weakness				
9. A mental illness is not a real medical illness				
10. People with a mental illness are dangerous				
11. It is best to avoid people with a mental illness so that you don't develop this problem				
12. If I had a mental illness I would not tell anyone				
13. If I had a mental illness, I would not seek help from a mental health professional				

Please indicate to what extent you agree with the following statements:

	Definitely unwilling	Probably unwilling	Probably willing	Definitely willing
14. How willing would you be to move next door to someone with a mental illness?				
15. How willing would you be to spend an evening socializing with someone with a mental illness?				
16. How willing would you be to make friends with someone with a mental illness?				
17. How willing would you be to have someone with a mental illness start working closely with you on a job?				
18. How willing would you be to have someone with a mental illness marry into your family?				
19. How willing would you be to vote for a politician if you knew they had suffered a mental illness?				
20. How willing would you be to employ someone if you knew they had a mental illness?				

Scoring

Total score is produced by summing all items (see reverse scored items below). Using a Likert scale with score from 1 to 4 (1: *very unlikely, strongly disagree, very unwilling*); (4: *very likely, strongly agree, very willing*).

Reverse scored items: 4, 7-13

Maximum score – 20 points

Minimum score – 80 points

Reference

Bowman, A. S., Prairie, T. P., Sterlingshires, M., Weatherby, N. L., Owusu, A., Story, C., Kim, J., Hamilton, G. (2018). *An examination of mental health literacy and stigma against mental illness using an Item Response Theory approach.* Proquest, doi: http://jewlscholar.mtsu.edu/xmlui/handle/mtsu/5780

Need Satisfaction Scale

1. I feel like I am free to decide for myself how to live my life.
2. I really like the people I interact with.
3. Often, I do not feel very competent
4. I feel pressured in my life.
5. People I know tell me I am good at what I do.
6. I get along with people I come into contact with
7. I pretty much keep to myself and don't have a lot of social contacts.
8. I generally feel free to express my ideas and opinions.
9. People in my life care about me.

CMNI

Levant, R. F., McDermott, R., Parent, M. C., Alshabani, N., Mahalik, J. R., & Hammer, J. H. (2020). Development and evaluation of a new short form of the Conformity to Masculine Norms Inventory (CMNI-30). *Journal of counseling psychology*, *67*(5), 622.

77. I tend to share my feelings (R)
52. I like to talk about my feelings (R)
36. I bring up my feelings when talking to others (R)

75. For me, the best feeling in the world comes from winning 2. I will do anything to win
6. In general I must get my way

47. I would feel good if I had many sexual partners 3. I would change sexual partners often if I could

72. I would find it enjoyable to date more than one person at a time

68. It's never ok for me to be violent (R)
44. I think that violence is sometimes necessary 25. I dislike any kind of violence (R)

51. It would be awful if people thought I was gay 73. I would get angry if people thought I was gay 37. I would be furious if someone thought I was gay

59. Having status is not important to me (R)
7. I think that trying to be important is a waste of time (R)

26. I would hate to be important (R)

76. Work comes first for me
64. I feel good when work is my first priority
84. I need to prioritize my work over other things

86. I love it when men are in charge of women
61. The women in my life should obey me
81. Things tend to be better when men are in charge

85. It bothers me when I have to ask for help 74. I am not ashamed to ask for help (R)
53. I never ask for help

24. I enjoy taking risks
40. I take risks
60. I put myself in risky situations

Self-Stigma Scale

Komiya, N., Good, G. E., & Sherrod, N. B. (2000). Emotional openness as a predictor of college students' attitudes toward seeking psychological help. *Journal of counseling psychology*, *47*(1), 138.

1. Seeing a psychologist for emotional or interpersonal problems carries social stigma.

2. It is a sign of personal weakness or inadequacy to see a psychologist for emotional or interpersonal problems.

3. People will see a person in a less favorable way if they come to know that he/she has seen a psychologist.

4. It is advisable for a person to hide from people that he/she has seen a psychologist.

5. People tend to like less those who are receiving professional psychological help.

Appendix B

IRBF024 - INFORMED CONSENT for ONLINE STUDIES

(Use this consent template when recruiting adult participants when online data are collected)

Mandatory Consent Requirements for online use:

a. Use the same text used in this form when requesting online consent from the participants – Provide the online consent link for IRB review
b. The first page of the survey must display this informed consent text.
c. Participants' consent to participate must be entertained by two distinct responses: one to consent and one to decline.
    i. The participant age must be verified through a separate question
    ii. Agreeing to consent and age verification must both be true before the online instrument can be administered.
    iii. Additional questions may be asked for filtering ineligible participants

IRBF024 – Participant Informed Consent (ONLINE)

Language to be used for online surveys that qualify for "no more than minimal risk"

Use the following text as printed here in the first page of the Qualtrics survey to administer online informed consent. Alterations to this template are allowed on a case by case basis. However, making alterations would delay the review and approval process.

Information and Disclosure Section

The following information is provided to inform you about the research project in which you have been invited to participate. Please read this disclosure and feel free to ask any questions. The investigators must answer all of your questions and please save this page as a PDF for future reference.

- Your participation in this research study is voluntary.

- You are also free to withdraw from this study at any time without loss of any benefits.

For additional information on your rights as a participant in this study, please contact the Middle Tennessee State University (MTSU) Office of Compliance (Tel 615-494-8918 or send your emails to irb_information@mtsu.edu. (URL: http://www.mtsu.edu/irb).

Please read the following and respond to the consent questions in the bottom if you wish to enroll in this study.

1. **Purpose**: This research project is designed to help us evaluate mental health literacy, stigma, and masculiinity in college athletes.
.
2. **Description**: There are several parts to this project. They are:
   - an 80 item survey that is based on a likert scae.
   - This consent script only covers surveys conducted online
   - You will NOT be audio recorded or videotaped in this study.

3. **IRB Approval Details**
   - Protocol Title: Exploring Mental Health Literacy, Masculinity, and Stigma in Collegiate Athletes.
   - Primary Investigator: Andrew Mauldin
   - PI Department & College: Health and Human Performance
   - Faculty Advisor (if PI is a student): Steve Estes
   - Protocol ID: 22-2117 7q Approval Date: 03/25/2022 Expiration Date: 03/31/2023

4. **Duration**: The whole activity should take about 10 minutes

5. **Here are your rights as a participant:**
   - Your participation in this research is voluntary.
   - You may skip any item that you don't want to answer, and you may stop the experiment at any time (but see the note below)
   - If you leave an item blank by either not clicking or entering a response, you may be warned that you missed one, just in case it was an accident. But you can continue the study without entering a response if you didn't want to answer any questions.
   - Some items may require a response to accurately present the survey.

6. **Risks & Discomforts:** This study uses a survey methodology and offers minimal risks. However there may be some personal discomfort due to the nature of the survey. Because this survey is examining mental health you may feel uncomfortable answering certain questions. Youwill be advised to skip any items they do not feel comfortable answering.

7. **Benefits:**
   a. Benefits to you: There are no direct benefits to you from this study.

b. Benefits to the field of science or the community: The benefits to this study will be aiding in the education on mental health awareness and adding to the education on destigmatizing mental health.

8. **Identifiable Information**: You will NOT be asked to provide identifiable personal information.

9. **Compensation: There is no compensation for participating in this study.**

10. **Confidentiality.** All efforts, within reason, will be made to keep the personal information private but total privacy cannot be promised. Your information may be shared with MTSU or the government, such as the Middle Tennessee State University Institutional Review Board, Federal Government Office for Human Research Protections, *if* you or someone else is in danger or if we are required to do so by law.

11. **Contact Information.** If you should have any questions about this research study or possibly injury, please feel free to contact Andrew Mauldin by telephone 615-966-5751 or by email am2ck@mtmail.mtsu.edu OR my faculty advisor, Dr. Steve Estes, at Enter a valid email ID and a telephone number. You can also contact the MTSU Office of compliance via telephone (615 494 8918) or by email (compliance@mtsu.edu). This contact information will be presented again at the end of the experiment.

You are not required to do anything further if you decide not to enroll in this study. Just quit your browser. Please complete the response section below if you wish to learn more or you wish to part take in this study.

Participant Response Section

☐No ☐Yes I have read this informed consent document pertaining to the above identified research

☐No ☐Yes The research procedures to be conducted are clear to me

☐No ☐Yes I confirm I am 18 years or older

☐No ☐Yes I am aware of the potential risks of the study

By clicking below, I affirm that I freely and voluntarily choose to participate in this study. I understand I can withdraw from this study at any time without facing any consequences.

☐ NO I do not consent

☐ Yes I consent